Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1. (currently amended) A catheter for insertion into a biological conduit comprising:

an elongate catheter shaft having a proximal end and a distal end, the catheter comprising:

a material collection chamber located within the catheter shaft,

a controllably arcuate segment configured to selectively transition between a relatively straight shape and a bowed shape, the controllably arcuate segment defining an opening in the form of a hole that is located at a convex portion of the controllably arcuate segment when the arcuate segment takes the bowed shape, wherein a portion of the controllably arcuate segment having the opening is configured to maintain a substantially constant cross section throughout the transition; and

a sliding member movably disposed within the shaft and configured to selectively traverse the opening to move [a] an occlusive material received through the opening into the material collection chamber and away from said opening.

2. (original) The catheter of Claim 1 further comprising suction means near the proximal end, said suction means in fluid communication with the opening in the controllably arcuate segment.

3. (original) The catheter of Claim 1 further comprising an aspiration chamber near the proximal end, said aspiration chamber in fluid communication with the material collection chamber.

4. (currently amended) The catheter of Claim 3 further comprising a one-way valve located between the aspiration chamber and the material collection chamber, said valve

oriented to allow material to flow from the material collection chamber to ~~the~~ an aspiration port extending from the aspiration chamber.

5. (withdrawn) The catheter of Claim 3 wherein the aspiration chamber includes an integrated plunger assembly.

6. (original) The catheter of Claim 1 wherein the material collection chamber is proximal to the controllably arcuate segment.

7. (original) The catheter of Claim 1 further comprising a material extraction lumen between the distal end of the catheter shaft and an aspiration port located on the proximal portion of the device.

8. (original) The catheter of Claim 1 wherein the controllably arcuate segment has a normally bowed bias.

9. (original) The catheter of Claim 8 wherein positioning of the sliding member within the controllably arcuate segment causes said arcuate segment to be relatively straight.

10. (withdrawn) The catheter of Claim 1 further comprising a curving element that is used to control the geometry of the controllably arcuate segment.

11. (withdrawn) The catheter of Claim 10 further comprising a power source which when connected to the curving element causes said curving element to change geometry.

12. (original) The catheter of Claim 1 wherein the sliding member has a cutting edge on the end facing the opening in the controllably arcuate segment.

13. (original) The catheter of Claim 1 wherein the sliding member is attached to a flexible shaft, said shaft traversing the length of the catheter and said sliding member advanced

and retracted by advancing and retracting said shaft from controls located on the proximal end of said catheter.

14. (original) The catheter of Claim 1 further comprising a rotational orientation element.

15. (currently amended) A catheter for insertion into a biological conduit comprising:

an elongate catheter shaft having a proximal end and a distal end, the catheter comprising:

a controllably arcuate segment configured to selectively transition between a relatively straight shape and a bowed shape, the arcuate segment defining an opening in the form of a hole that is located at a convex portion of the arcuate segment when the arcuate segment takes the bowed shape, wherein the hole is configured to receive and occlusive material when the arcuate segment takes the bowed shape and a portion of the arcuate segment having the opening is configured to maintain a substantially constant cross section throughout the transition;

an aspiration chamber located near the shaft proximal end, the aspiration chamber having an aspiration port configured to receive a vacuum input; and

an aspiration lumen configured to form a vacuum path between the aspiration chamber and the opening when the vacuum input is applied to the aspiration port.

16. (Previously presented) The catheter of Claim 15 further comprising a sliding member movably disposed within the shaft and configured to selectively traverse the opening to move the material received through the opening away from said opening and toward the aspiration chamber.

17. (withdrawn) A transluminal method for removing material from a biological conduit, said method comprising the steps of:

A. providing a catheter device that comprises:

an elongate catheter shaft having a proximal end and a distal end,

a controllably arcuate segment including at least one opening in fluid communication with the proximal end, and;

a sliding member that moves material received through the arcuate segment opening away from said opening

B. percutaneously or surgically inserting and transluminally advancing the catheter into the biological conduit

C. applying suction to the at least one opening in the controllably arcuate segment

D. retracting sliding member moving material away from the at least one opening.

18. (withdrawn) The method of Claim 17 further comprising the step of:

E. transforming controllably arcuate segment to a relatively straight geometry.

19. (withdrawn) The method of Claim 18 further comprising the steps of:

F. rotating the catheter device

G. repeating steps C thru E at least one time.

20. (withdrawn) A transluminal method for removing material from a biological conduit, said method comprising the steps of:

A. providing a catheter device that comprises:
an elongate catheter shaft having a proximal end and a distal end
a controllably arcuate segment including at least one opening in fluid communication with the proximal end

B. percutaneously or surgically inserting and transluminally advancing the catheter into the biological conduit

C. applying suction to the at least one opening in the controllably arcuate segment

D. changing the shape of the controllably arcuate segment from a relatively bowed geometry to a relatively straight geometry.